



RECEIVED

SEP 27 2002

TECH CENTER 1600/2900

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                  Paitan, Yossi  
  
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65                  Leu Asp Gly Ala Ser Val Ala Pro Leu Leu Asp Ala Leu Arg Glu Arg  
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75                  Ala Pro Tyr Arg Ala Ala Val Glu Trp Glu Gln Leu Ala Ile Gly Gly  
                  130               135               140  
  
80                  Asp Glu Gly Arg Arg His Leu Asp Tyr Trp Arg His Val Leu Ala Thr  
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                  165               170               175  
  
90                  Thr Gly Leu Asp Ser Glu Gly Ala Thr His Ser Gln Arg Val Pro Thr  
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E1

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195

200

205

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5 Thr Arg Gln Asp Asp Val Val Val Gly Ile Pro Thr Met Gly Arg Pro  
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Arg Ala Glu Leu Ala Thr Ala Ile Gly Tyr Phe Val Asn Val Met Ala  
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Val Arg Ala Arg Gly Leu Gly Gln His Ser Phe Gly Ser Leu Leu Arg  
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15 His Leu His Asp Ser Val Ile Asp Gly Leu Glu His Ala His Tyr Pro  
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Phe Pro Arg Val Val Lys Asp Leu Arg Leu Ser Asn Gly Pro Glu Glu  
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Ser Ala Pro Pro Arg Pro Glu Pro Arg Ser Gly Gly Leu Pro Glu Leu  
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Glu Pro Leu Asp Cys Val His Gln Glu Gly Ala Tyr Pro Leu Glu Leu  
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30 Glu Val Val Glu Gly Ala Lys Gly Leu Thr Leu His Phe Lys Tyr Asp  
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Trp Asn Ala Thr Ala Thr Pro Phe Leu Glu Asp Leu Gly Val His Glu  
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Tyr Glu Gly His Ser Leu Ser Tyr Gln Ala Leu Asp Thr Arg Ser Arg  
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Val Gly Ile Tyr Leu Asp Arg Ser Ala Glu Leu Val Ala Ala Met Leu  
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Gly Val Leu Ser Ala Gly Ala Ala Tyr Val Pro Leu Asp Pro Val His  
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 515 520 525

E  
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 AMT

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5 Ala Ser Cys Lys Val Cys Val Leu Glu Asp Val Lys Ala Gly Ala Thr  
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Ser Ala Pro Ala Gly Thr Ser Pro Asn Gly Leu Ala Tyr Val Ile Tyr  
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Gly Val Val Asn Phe Leu Leu Cys Met Arg Arg Thr Leu Gly Leu Lys  
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Arg Thr Asp Ser Leu Leu Ala Val Thr Thr Tyr Cys Phe Asp Ile Ala  
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20 Ala Leu Glu Leu Leu Pro Leu Cys Ala Gly Ala Gln Val Ile Ile  
625 630 635 640

Ala Ser Ala Glu Thr Val Arg Asp Ala Gln Ala Leu Lys Arg Ala Leu  
645 650 655

25 Arg Thr His Arg Pro Thr Leu Met Gln Ala Thr Pro Ala Thr Trp Thr  
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Leu Leu Phe Gln Ser Gly Trp Glu Asn Ala Glu Arg Val Arg Ile Leu  
30 675 680 685

Cys Gly Gly Glu Ala Leu Pro Glu Ser Leu Lys Ala His Phe Val Arg  
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Trp Ser Thr Met Ala Lys Val Ser Ala Ser Arg Pro Val Thr Ile Gly  
725 730 735

40 Lys Pro Ile Asp Asn Thr Gln Val Tyr Val Leu Asp Asp Arg Met Gln  
740 745 750

45 Pro Val Pro Ile Gly Val Pro Gly Glu Leu Trp Ile Ala Gly Ala Gly  
755 760 765

Val Ala Cys Gly Tyr Leu Asn Arg Pro Ala Leu Thr Ala Glu Arg Phe  
770 775 780

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785 790 795 800

Leu Ala Arg Trp Arg Ala Asp Gly Glu Val Glu Tyr Leu Gly Arg Leu  
805 810 815

55 Asp His Gln Val Lys Val Arg Gly Phe Arg Ile Glu Met Gly Glu Ile  
820 825 830

60 Glu Ala Gln Leu Ala Gly His Pro Ser Val Lys Asn Cys Ala Val Val  
835 840 845

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5 Ala Gly Thr Ser Phe Asp Glu Glu Ala Ile Arg Ala His Leu Arg Lys  
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Phe Leu Pro Asp Tyr Met Val Pro Ala His Val Phe Ala Val Asp Ala  
885 890 895

10 Ile Pro Leu Ser Gly Asn Gly Lys Val Asp Arg Gly Gln Leu Met Ala  
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Arg Pro Val Val Thr Arg Arg Lys Thr Ser Ala Val His Ala Arg Ser  
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15 Pro Val Glu Ala Thr Leu Val Glu Leu Trp Lys Asn Val Leu Gln Val  
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Asn Glu Val Gly Val Glu Asp Arg Phe Phe Glu Val Gly Gly Asp Ser  
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Val Leu Ala Ala Val Leu Val Glu Glu Met Asn Arg Arg Phe Asp Thr  
965 970 975

25 Arg Leu Ala Val Thr Asp Leu Phe Lys Tyr Val Asn Ile Arg Asp Met  
980 985 990

Ala Arg His Met Glu Gly Ala Thr Ala Gln Ala Arg Thr Gly Ala Thr  
995 1000 1005

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Leu Ala Val Ile Gly Ile Ser Cys Gln Leu Pro Gly Ala Ala Asp Pro  
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Trp Arg Phe Trp Lys Asn Leu Arg Glu Gly Arg Asp Ser Val Val Ala  
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E1  
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Glu Asp Ala Ala Thr Thr Pro Glu Arg Leu Gly Pro Cys Gly Val Phe  
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Gly Leu Lys Gly Pro Ser Leu Phe Val His Thr Asn Cys Ser Ser Ser  
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15 Lys Ala Phe Asp Ala Ala Ala Asp Gly Met Ile Ala Gly Glu Gly Val  
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Asp Lys Val Gly Leu Tyr Ala Pro Ser Ala Thr Gly Gln Ala Glu Val  
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Val Ser Ala Leu Ser Glu Ala Phe Arg Thr Phe Thr Asp Arg Arg Gly  
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Tyr Cys Arg Leu Gly Ser Val Lys Ser Asn Leu Gly His Leu Asp Thr  
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E1  
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Glu Pro Leu Asp Ala Leu Gly Ala Glu Gly Ala Ser Ala Leu Ala Ser  
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Arg Val Lys Ala Leu Leu Ser Glu Arg Leu Thr Ala Pro Val Thr Leu  
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His Ala Gly Gln Leu Ser Arg Cys Glu Trp Arg Glu Ala Arg Val Ala  
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Lys Gly Asp Ala Ser Arg Phe Trp Arg Glu Asp Gly Val Tyr Val Ile  
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60 1810 1815 1820

Lys Arg Ala Thr Arg Ala Thr Val Ile Leu Val Ala Arg Ala Ser Ser  
1825 1830 1835 1840

5 Ala Glu Ala Val Asp Gly Gly Asn Gly Leu Arg Val Arg His Leu Pro  
1845 1850 1855

Val Asp Val Thr Gln Pro Asn Asp Val Asn Ala Phe Val Ala Thr Val  
1860 1865 1870

10 Leu Arg Glu His Gly Arg Ile Asp Gly Val Ile His Ala Ala Gly Ile  
1875 1880 1885

Arg Arg Asp Asn Tyr Leu Leu Asn Lys Pro Val Ala Glu Met Gln Ala  
1890 1895 1900

15 Val Leu Ala Pro Lys Val Val Gly Leu Val Asn Leu Asp His Ala Thr  
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Arg Glu Leu Pro Leu Asp Phe Phe Val Thr Phe Ser Ser Leu Ala Ala  
20 1925 1930 1935

Phe Gly Asn Ala Gly Gln Ser Asp Tyr Ala Ala Ala Asn Gly Phe Met  
1940 1945 1950

25 Asp Gly Phe Ala Glu Ser Arg Ala Ala Leu Val Asn Ala Gly Gln Arg  
1955 1960 1965

Gln Gly Arg Thr Val Ser Ile Arg Trp Pro Leu Trp Glu Asn Gly Gly  
1970 1975 1980

30 Met Gln Leu Asp Ser Arg Ser Arg Glu Val Leu Met Gln Arg Thr Gly  
1985 1990 1995 2000

Met Ala Ala Leu Gly Asp Glu Ala Gly Leu Gly Ala Phe Tyr Arg Ala  
35 2005 2010 2015

Leu Glu Leu Gly Ser Pro Gly Val Ala Val Trp Thr Gly Glu Ala Gln  
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E1  
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Ile Thr Gln Met Asn Gln Ala Leu Glu Gly Pro Tyr Asn Ala Leu Ser  
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Leu Glu Asp Ala Gly Tyr Thr Arg Asp Ser Leu Ala Gln Arg Phe Gly  
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30 Tyr Gly Ala Glu Leu Glu Gly Arg Asp Ala Ser Val Arg Pro Tyr Thr  
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 atggtggta ctgcgtcgac ggcgcacgaa ttggggagg gactgcggcg aggcatcgcg 4620  
 10 acggtggcg gtgcccacgt gggAACGGTG gtcgatacgat caccacggat ggtatggcgat 4680  
 gctcgggcag ttgcggaggc gtggggcgac ggcgactcga ttgactggga ttgcgtgcac 4740  
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 15 ccgccttcg ttccgacctg gcaagccgtgg tctgagggcg cgtcaaatgc ctcgttggcg 4920  
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 20 gatgcgtcg gactgagtttgc cctggggagc ctgctcggtt cgggtgtcgca ggagaatccg 5220  
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 25 gccgaaatcg ggaagcgcgc gacgcgggccc accgttattc tgggtggcccg cgcacatcccg 5520  
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 30 cgcgagctgc ccctggattt ctgcgttcacg ttctcgatccc tggccgggtt tggaaacgccc 5820  
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 ggcgtcgta acgcggaca gggcaggggc cggacgggtt ccatccgtt gccgcctctgg 5940  
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 35 gtttcggccg caccgcctcc gcatcagggt gcttggacg ccgtgggttc catcaccgg 6180  
 aagggtcgaga cgaagctgaa ggcgtcttc agcgaggatca cgcgatacga agagcgccgc 6240  
 atcgatgccc gccagccat gggcgctat ggcattcgact ccatcatcat cacgcagatg 6300  
 aaccaagccc tcgaaggggcc gtacaacgcctt ctctcgaaga cgcgttctt cgaataccgg 6360  
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 40 gtggcggcac ctggagagaa ttctcgatcc gtcattccagg aggccaggcc gccacgtcg 6480  
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 45 gctgacttcg acccgctgtt ctcaacatc tcgcggcgat aggccgtcgat cttggacccgg 6780  
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 gacagcctgg cccagcgctt tggcagcgcg gtggggctt tcgcggaaat cacgaagacg 6900  
 ggctacgaaat tctacggcgc ggagctggaa ggacgagatg cctcgatccg gccctatacg 6960  
 tcgttgcgt ctgttgcctt ccgcgttcg tatctgtcg acctgtgggg gccgagcatg 7020  
 50 cccgtggaca ccatgtgttc ggcgtcgatc acagccgtcc acatggctt cgaggcgctg 7080  
 caacgaggcg cctcgatccat ggcacatcgat ggtggatgtaa atctctacgt ccacccgtcg 7140  
 agctacgtca gcctgtccgg gcacgcgtat ctgtcgac 7178

55 <210> 3  
 <211> 785  
 <212> Amino acid  
 <213> *Myxococcus xanthus*

60 <400> 3  
 Met Lys Val Val Asn Lys Leu Leu Glu Lys Leu Pro Asp Val Val Ala

El  
 cont  
 45

1 5 10 15

Gly Lys Val Pro Asp Val Lys Leu Gln Asp Gln Asp Ile Lys Val Pro  
20 25 30

5 Leu Ala Gln Gly Thr Phe Thr Glu Glu Lys Ile Leu Pro Pro Lys Leu  
35 40 45

10 Ala Met His Gly Phe Thr Leu Ser Phe Glu Ala Thr Gly Glu Ala Ser  
50 55 60

Ile Arg Asn Phe Asn Ser Leu Gly Asp Val Asp Glu Asn Gly Ile Ile  
65 70 75 80

15 Gly Glu Pro Ser Pro Glu Ser Ala Glu Pro Gly Pro Arg Pro Gln Leu  
85 90 95

Leu Leu Gly Ser Asp Ile Gly Trp Met Arg Tyr Gln Val Ser Ala Arg  
100 105 110

20 Val Lys Ala Ala Val Ser Ala Ser Leu Ser Phe Leu Ala Ser Glu Asn  
115 120 125

25 Gln Thr Glu Leu Ser Val Thr Leu Ser Asp Tyr Arg Ala His Pro Leu  
130 135 140

Gly Gln Asn Met Arg Glu Ala Val Arg Ser Asp Leu Ser Glu Leu Arg  
145 150 155 160

30 Leu Met Gln Ala Thr Asp Leu Ala Lys Leu Thr Thr Gly Asp Ala Val  
165 170 175

Ala Trp His Val Arg Gly Ala Leu His Thr Arg Leu Glu Leu Asn Trp  
180 185 190

35 Ala Asp Ile Phe Pro Thr Asn Leu Asn Arg Leu Gly Phe Leu Arg Gly  
195 200 205

40 Asn Glu Leu Leu Ala Leu Lys Thr Ser Ala Lys Ala Gly Leu Ser Ala  
210 215 220

Arg Val Ser Leu Thr Asp Asp Tyr Gln Leu Ser Phe Ser Arg Pro Arg  
225 230 235 240

45 Ala Gly Arg Ile Gln Val Ala Val Arg Lys Val Lys Ser His Glu Gln  
245 250 255

Ala Leu Ser Ala Gly Leu Gly Ile Thr Val Glu Leu Leu Asp Pro Ala  
260 265 270

50 Thr Val Lys Ala Gln Leu Gly Gln Leu Leu Glu Ala Leu Leu Gly Pro  
275 280 285

Val Leu Arg Asp Leu Val Lys Lys Gly Thr Thr Ala Val Glu Ile Met  
55 290 295 300

Asp Gly Leu Val Asp Lys Ala Ser Lys Ala Lys Leu Asp Asp Asn Gln  
305 310 315 320

60 Lys Lys Val Leu Gly Leu Val Leu Glu Arg Leu Gly Ile Asp Pro Gln  
325 330 335

E1  
Cont

Leu Ala Asp Pro Ala Asn Leu Pro Gln Ala Trp Ala Asp Phe Lys Ala  
340 345 350

5 Arg Val Ala Glu Ser Leu Glu Asn Ala Val Arg Thr Gln Val Ala Glu  
355 360 365

Gly Phe Glu Tyr Glu Tyr Leu Arg Leu Ser Glu Thr Ser Thr Leu Leu  
370 375 380

10 Glu Val Val Val Glu Asp Val Thr Ala Met Arg Phe His Glu Ser Leu  
385 390 395 400

Leu Lys Gly Asn Leu Val Glu Leu Leu Lys Trp Met Lys Ser Leu Pro  
15 405 410 415

Ala Gln Gln Ser Glu Phe Glu Leu Arg Asn Tyr Leu His Ala Thr Thr  
420 425 430

20 Leu Thr Arg Gln Gln Ala Ile Gly Phe Ser Leu Gly Leu Gly Ser Phe  
435 440 445

Glu Leu Leu Lys Ala Lys Asn Val Ser Lys Gln Ser Trp Val Thr Gln  
450 455 460

25 Glu Asn Phe Gln Gly Ala Arg Arg Met Ala Phe Leu Gly Arg Arg Gly  
465 470 475 480

Tyr Glu Asp Lys Leu Leu Gly Thr Arg Gly Gln Trp Val Val Asp Leu  
30 485 490 495

Lys Ala Asp Met Thr Arg Phe Ser Pro Thr Pro Val Ala Ser Asp Phe  
500 505 510

35 Gly Tyr Gly Leu His Leu Met Leu Trp Gly Arg Gln Lys Lys Leu Ser  
515 520 525

Arg Lys Asp Leu Gln Gln Ala Val Asp Asp Ala Val Val Trp Gly Val  
530 535 540

40 Leu Asp Ala Lys Asp Ala Ala Thr Val Ile Ser Thr Met Gln Glu Asp  
545 550 555 560

45 Met Gly Lys His Pro Ile Glu Thr Arg Leu Glu Leu Lys Met Ala Asp  
565 570 575

Asp Ser Phe Arg Ala Leu Val Pro Arg Ile Gln Thr Leu Glu Leu Ser  
580 585 590

50 Arg Phe Ser Arg Ala Leu Ala Arg Ala Leu Pro Trp Ser Glu Gln Leu  
595 600 605

Pro Arg Ala Ser Ala Glu Phe Arg Arg Ala Val Tyr Ala Pro Ile Trp  
610 615 620

55 Glu Ala Tyr Leu Arg Glu Val Gln Glu Gln Gly Ser Leu Met Leu Asn  
625 630 635 640

Asp Leu Ser Pro Ser Arg Ala Ala Gln Ile Ala Lys Trp Tyr Phe Gln  
60 645 650 655

E  
cont

Lys Asp Pro Thr Val Arg Asp Leu Gly Lys Asp Leu Gln Leu Ile Glu  
660 665 670

5 Ser Glu Trp Arg Pro Gly Gly Asn Phe Ser Phe Ala Glu Val Ile  
675 680 685

Ser Lys Asn Pro Asn Thr Leu Met Arg Cys Arg Asn Phe Val Ser Gly  
690 695 700

10 Met Val Arg Leu Arg Arg Ala Ile Asp Glu Arg Lys Ala Pro Asp Glu  
705 710 715 720

Leu Arg Thr Val Phe Gly Glu Leu Glu Gly Met Trp Thr Thr Gly Phe  
725 730 735

15 His Leu Arg Ala Ala Gly Ser Leu Leu Ser Asp Leu Ala Gln Ser Thr  
740 745 750

Pro Leu Gly Leu Ala Gly Val Glu Arg Thr Leu Thr Val Arg Val Ala  
20 755 760 765

Asp Ser Glu Glu Gln Leu Val Phe Ser Thr Ala Arg Ser Thr Gly Ala  
770 775 780

25 Ala  
785

30 <210> 4  
<211> 529  
<212> Amino acid  
<213> *Myxococcus xanthus*

35 <400> 4  
Met Pro Ser Gly Cys Tyr Gly Ala Ala Ser Ala Phe Val Leu Pro Pro  
1 5 10 15

Leu Pro Ala Met Pro Gln Ala Pro Ser Asp Val Ser Gln Val Leu Leu  
40 20 25 30

40 Pro Phe Gly Gly Leu Val Gly Arg Glu Val Asp Leu Asp Ala Phe Leu  
35 40 45

E1  
Cont  
45 Gln Thr Leu Met Asp Arg Ile Ala Ile Thr Leu Gln Ala Asp Arg Gly  
50 55 60

60 Thr Leu Trp Leu Leu Asp Pro Ala Arg Arg Glu Leu Phe Ser Arg Ala  
65 70 75 80

50 Ala His Leu Pro Glu Val Ser Gln Ile Arg Val Lys Leu Gly Gln Gly  
85 90 95

55 Val Ala Gly Thr Val Ala Lys Ala Gly His Ala Ile Asn Val Pro Asp  
100 105 110

Pro Arg Gly Glu Gln Arg Phe Phe Ala Asp Ile Asp Arg Met Thr Gly  
115 120 125

60 Tyr Arg Thr Thr Ser Leu Leu Ala Val Pro Leu Arg Asp Gly Asp Gly  
130 135 140

Ala Leu Tyr Gly Val Leu Gln Val Leu Asn Arg Arg Gly Glu Asp Arg  
145 150 155 160

5 Phe Thr Asp Glu Asp Thr Gln Arg Leu Thr Ala Ile Ala Ser Gln Val  
165 170 175

Ser Thr Ala Leu Gln Ser Thr Ser Leu Tyr Gln Glu Leu Gln Arg Ala  
180 185 190

10 Lys Glu Gln Pro Gln Val Pro Val Gly Tyr Phe Phe Asn Arg Ile Ile  
195 200 205

Gly Glu Ser Pro Gln Leu Gln Ala Ile Tyr Arg Leu Val Arg Lys Ala  
210 215 220

15 Ala Pro Thr Asp Ala Thr Val Leu Leu Arg Gly Glu Ser Gly Ser Gly  
225 230 235 240

Lys Glu Leu Phe Ala Arg Ala Val His Val Asn Gly Pro Arg Arg Asp  
20 245 250 255

Gln Pro Phe Ile Lys Val Asp Cys Ala Ala Leu Pro Ala Thr Leu Ile  
260 265 270

25 Glu Asn Glu Leu Phe Gly His Glu Arg Gly Ala Phe Thr Gly Ala Asp  
275 280 285

His Arg Val Pro Gly Lys Phe Glu Ala Ala Ser Gly Gly Thr Val Phe  
290 295 300

30 Ile Asp Glu Ile Gly Glu Leu Pro Leu Pro Val Gln Gly Lys Leu Leu  
305 310 315 320

Arg Val Ile Gln Asp Arg Glu Phe Glu Arg Val Gly Gly Thr Gln Ala  
35 325 330 335

Val Lys Val Asp Val Arg Ile Val Ala Ala Thr His Arg Asp Leu Ala  
340 345 350

40 Arg Met Val Ala Glu Gly Arg Phe Arg Glu Asp Leu Tyr Tyr Arg Ile  
355 360 365

E1  
Cont 45 Lys Val Val Glu Val Val Leu Pro Pro Leu Arg Glu Arg Gly Ala Glu  
370 375 380

45 Asp Ile Glu Arg Leu Ala Arg His Phe Val Ala Ala Val Ala Arg Arg  
385 390 395 400

50 His Arg Leu Thr Pro Pro Arg Leu Ser Ala Ala Ala Val Glu Arg Leu  
405 410 415

Lys Arg Tyr Arg Trp Pro Gly Asn Val Arg Glu Leu Glu Asn Cys Ile  
420 425 430

55 Glu Ser Ala Val Val Leu Cys Glu Gly Glu Ile Leu Glu Glu His Leu  
435 440 445

60 Pro Leu Pro Asp Val Asp Arg Ala Ala Leu Pro Pro Pro Ala Ala Ala  
450 455 460

Gln Gly Val Asn Ala Pro Thr Ala Pro Ala Pro Leu Asp Ala Gly Leu

465                    470                    475                    480  
Leu Pro Leu Ala Glu Val Glu Arg Arg His Ile Leu Arg Val Leu Asp  
485                    490                    495

5                    Ala Val Lys Gly Asn Arg Thr Ala Ala Ala Arg Val Leu Ala Ile Gly  
500                    505                    510

10                    Arg Asn Thr Leu Ala Arg Lys Leu Lys Glu Tyr Gly Leu Gly Asp Glu  
515                    520                    525

Pro

15                    <210> 5  
                      <211> 292  
                      <212> Amino acid  
                      <213> Myxococcus xanthus

20                    <400> 5  
Met Arg Ala Ser Gln Ala Glu Ala Pro His Ser Arg Arg Leu Thr Met  
1                    5                    10                    15

25                    Glu Val Arg Phe His Gly Val Arg Gly Ser Ile Ala Val Ser Gly Ser  
20                    25                    30

30                    Arg Ile Gly Gly Asn Thr Ala Cys Val Glu Val Thr Ser Gln Gly His  
35                    40                    45

35                    Arg Leu Ile Leu Asp Ala Gly Thr Gly Ile Arg Ala Leu Gly Glu Ile  
50                    55                    60

35                    Met Met Arg Glu Gly Ala Pro Gln Glu Ala Thr Leu Phe Phe Ser His  
65                    70                    75                    80

Leu His Trp Asp His Val Gln Gly Phe Pro Phe Phe Thr Pro Ala Trp  
85                    90                    95

40                    Leu Pro Thr Ser Glu Leu Thr Leu Tyr Gly Pro Gly Ala Asn Gly Ala  
100                    105                    110  
E1  
Cont                    Gln Ala Leu Gln Ser Glu Leu Ala Ala Gln Met Gln Pro Leu His Phe  
115                    120                    125

45                    Pro Val Pro Leu Ser Thr Met Arg Ser Arg Met Asp Phe Arg Ser Ala  
130                    135                    140

50                    Leu His Ala Arg Pro Val Glu Val Gly Pro Phe Arg Val Thr Pro Ile  
145                    150                    155                    160

Asp Val Pro His Pro Gln Gly Cys Leu Ala Tyr Arg Leu Glu Ala Asp  
165                    170                    175

55                    Gly His Ser Phe Val Tyr Ala Thr Asp Val Glu Val Arg Val Gln Glu  
180                    185                    190

60                    Leu Ala Pro Glu Val Gly Arg Leu Phe Glu Gly Ala Asp Val Leu Cys  
195                    200                    205

Leu Asp Ala Gln Tyr Thr Pro Asp Glu Tyr Glu Gly Arg Lys Gly Val

210

215

220

Ala Lys Lys Gly Trp Gly His Ser Thr Met Met Asp Ala Ala Gly Val  
225 230 235 240

5 Ala Gly Leu Val Gly Ala Arg Arg Leu Cys Leu Phe His His Asp Pro  
245 250 255

10 Ala His Gly Asp Asp Met Leu Glu Asp Met Ala Glu Gln Ala Arg Ala  
260 265 270

Leu Phe Pro Val Cys Glu Pro Ala Arg Glu Gly Gln Arg Leu Val Leu  
275 280 285

15 Gly Arg Ala Ala  
290

20 <210> 6

<211> 168

<212> Amino acid

<213> Myxococcus xanthus

25 <400> 6

Met Pro Gly Pro Arg Cys Ala Glu Asn Asp Trp Val Ala Leu Leu Val  
1 5 10 15

Arg Val Asn His Glu Lys Val Ala Ala Ala Gln Leu Gly Lys His Gly  
20 25 30

30 Tyr Glu Phe Phe Leu Pro Thr Tyr Thr Pro Pro Lys Ser Ser Gly Val  
35 40 45

35 Lys Ala Lys Leu Pro Leu Phe Pro Gly Tyr Leu Phe Cys Arg Tyr Gln  
50 55 60

Pro Leu Asn Pro Tyr Arg Ile Val Arg Ala Pro Gly Val Ile Arg Leu  
65 70 75 80

40 Leu Gly Gly Asp Ala Gly Pro Glu Ala Val Pro Ala Gln Glu Leu Glu  
85 90 95

45 Ala Ile Arg Arg Val Ala Asp Ser Gly Val Ser Ser Asn Pro Cys Asp  
100 105 110

Tyr Leu Arg Val Gly Gln Arg Val Arg Ile Ile Glu Gly Pro Leu Thr  
115 120 125

50 Gly Leu Glu Gly Ser Leu Val Thr Ser Lys Ser Gln Leu Arg Phe Ile  
130 135 140

Val Ser Val Gly Leu Leu Gln Arg Ser Val Ser Val Glu Val Ser Ala  
145 150 155 160

55 Glu Gln Leu Glu Pro Ile Thr Asp  
165

60 <210> 7

<211> 79

<212> Amino acid

E  
Cont.  
45

<213> *Myxococcus xanthus*

<400> 7

5 Met Asp Lys Arg Ile Ile Phe Asp Ile Val Thr Ser Ser Val Arg Glu  
1 5 10 15

Val Val Pro Glu Leu Glu Ser His Pro Phe Glu Pro Glu Asp Asp Leu  
20 25 30

10 Val Gly Leu Gly Ala Asn Ser Leu Asp Arg Ala Glu Ile Val Asn Leu  
35 40 45

Thr Leu Glu Lys Leu Ala Leu Asn Ile Pro Arg Val Glu Leu Ile Asp  
50 55 60

15 Ala Lys Thr Ile Gly Gly Leu Val Asp Val Leu His Ala Arg Leu  
65 70 75

20 <210> 8

<211> 420

<212> Amino acid

<213> *Myxococcus xanthus*

25 <400> 8

Met Gly Pro Val Gly Ile Glu Ala Met Asn Ala Tyr Cys Gly Ile Ala  
1 5 10 15

30 Arg Leu Asp Val Leu Gln Leu Ala Thr His Arg Gly Leu Asp Thr Ser  
20 25 30

Arg Phe Ala Asn Leu Leu Met Glu Glu Lys Thr Val Pro Leu Pro Tyr  
35 40 45

35 Glu Asp Pro Val Thr Tyr Gly Val Asn Ala Ala Arg Pro Ile Leu Asp  
50 55 60

40 Gln Leu Thr Ala Ala Glu Arg Asp Ser Ile Glu Leu Leu Val Ala Cys  
65 70 75 80

45 Thr Glu Ser Ser Phe Asp Phe Gly Lys Ala Met Ser Thr Tyr Leu His  
85 90 95

45 Gln His Leu Gly Leu Ser Arg Asn Cys Arg Leu Ile Glu Leu Lys Ser  
100 105 110

50 Ala Cys Tyr Ser Gly Val Ala Gly Leu Gln Met Ala Val Asn Phe Ile  
115 120 125

50 Leu Ser Gly Val Ser Pro Gly Ala Lys Ala Leu Val Val Ala Ser Asp  
130 135 140

55 Leu Ser Arg Phe Ser Ile Ala Glu Gly Gly Asp Ala Ser Thr Glu Asp  
145 150 155 160

55 Trp Ser Phe Ala Glu Pro Ser Ser Gly Ala Gly Ala Val Ala Met Leu  
165 170 175

60 Val Ser Asp Thr Pro Arg Val Phe Arg Val Asp Val Gly Ala Asn Gly  
180 185 190

E  
CMT

Tyr Tyr Gly Tyr Glu Val Met Asp Thr Cys Arg Pro Val Ala Asp Ser  
195 200 205

5 Glu Ala Gly Asp Ala Asp Leu Ser Leu Leu Ser Tyr Leu Asp Cys Cys  
210 215 220

Glu Asn Ala Phe Arg Glu Tyr Thr Arg Arg Val Pro Ala Ala Asn Tyr  
225 230 235 240

10 Ala Glu Ser Phe Gly Tyr Leu Ala Phe His Thr Pro Phe Gly Gly Met  
245 250 255

Val Lys Gly Ala His Arg Thr Met Met Arg Lys Phe Ser Gly Lys Asn  
260 265 270

15 Arg Gly Asp Ile Glu Ala Asp Phe Gln Arg Arg Val Ala Pro Gly Leu  
275 280 285

Thr Tyr Cys Gln Arg Val Gly Asn Ile Met Gly Ala Thr Met Ala Leu  
290 295 300

20 Ser Leu Leu Gly Thr Ile Asp His Gly Asp Phe Ala Thr Ala Lys Arg  
305 310 315 320

25 Ile Gly Cys Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe Phe Ser  
325 330 335

Gly Val Val Thr Glu Glu Gly Gln Gln Arg Gln Arg Ala Leu Gly Leu  
340 345 350

30 Gly Glu Ala Leu Gly Arg Arg Gln Gln Leu Ser Met Pro Asp Tyr Asp  
355 360 365

Ala Leu Leu Lys Gly Asn Gly Leu Val Arg Phe Gly Thr Arg Asn Ala  
35 370 375 380

Glu Leu Asp Phe Gly Val Val Gly Ser Ile Arg Pro Gly Gly Trp Gly  
385 390 395 400

40 Arg Pro Leu Leu Phe Leu Ser Ala Ile Arg Asp Phe His Arg Asp Tyr  
405 410 415

E  
cont  
45 Gln Trp Ile Ser  
420

<210> 9  
<211> 325  
<212> Amino acid  
50 <213> *Myxococcus xanthus*

<400> 9  
Met Ser Ser Val Ala Thr Ala Val Pro Leu Thr Ala Arg Asp Ser Ala  
1 5 10 15

55 Val Ser Arg Arg Leu Arg Ile Thr Pro Ser Met Cys Gly Gln Thr Ser  
20 25 30

60 Leu Phe Ala Gly Gln Ile Gly Asp Trp Ala Trp Asp Thr Val Ser Arg  
35 40 45

1

Leu Cys Gly Thr Asp Val Leu Thr Ala Thr Asn Ala Ser Gly Ala Pro  
50 55 60

5 Thr Tyr Leu Ala Phe Tyr Tyr Phe Arg Ile Arg Gly Thr Pro Ala Leu  
65 70 75 80

His Pro Gly Ala Leu Arg Phe Gly Asp Thr Leu Asp Val Thr Ser Lys  
85 90 95

10 Ala Tyr Asn Phe Gly Ser Glu Ser Val Leu Thr Val His Arg Ile Cys  
100 105 110

Lys Thr Ala Glu Gly Gly Ala Pro Glu Ala Asp Ala Phe Gly His Glu  
115 120 125

15 Glu Leu Tyr Glu Gln Pro Gln Pro Gly Arg Ile Tyr Ala Glu Thr Phe  
130 135 140

Asn Arg Trp Ile Thr Arg Ser Asp Gly Lys Ser Asn Glu Ser Leu Ile  
20 145 150 155 160

Lys Ser Ser Pro Val Gly Phe Gln Tyr Ala His Leu Pro Leu Leu Pro  
165 170 175

25 Asp Glu Tyr Ser Pro Arg Arg Ala Tyr Gly Asp Ala Arg Ala Arg Gly  
180 185 190

Thr Phe His Asp Val Asp Ser Ala Glu Tyr Arg Leu Thr Val Asp Arg  
195 200 205

30 Phe Pro Leu Arg Tyr Ala Val Asp Val Ile Arg Asp Val Asn Gly Val  
210 215 220

Gly Leu Ile Tyr Phe Ala Ser Tyr Phe Ser Met Val Asp Trp Ala Ile  
35 225 230 235 240

Trp Gln Leu Ala Arg His Gln Gly Arg Ser Glu Gln Ala Phe Leu Ser  
245 250 255

40 Arg Val Val Leu Asp Gln Gln Leu Cys Phe Leu Gly Asn Ala Ala Leu  
260 265 270

45 Asp Thr Thr Phe Asp Ile Asp Val Gln His Trp Glu Arg Val Gly Gly  
275 280 285

Gly Glu Glu Leu Phe Asn Val Lys Met Arg Glu Gly Ala Gln Gly Arg  
290 295 300

50 Asp Ile Ala Val Ala Thr Val Lys Val Arg Phe Asp Ala Ala Ser Glu  
305 310 315 320

Gly Gly Arg Arg Gly  
325

55

<210> 10  
<211> 83  
<212> Amino acid  
<213> Myxococcus xanthus

60 <400> 10

Met Thr Asp Glu Gln Ile Arg Gly Val Val His Gln Ser Ile Val Arg  
 1 5 10 15

Val Leu Pro Arg Val Arg Ser Asn Glu Ile Ala Gly His Leu Asn Leu  
 5 20 25 30

Arg Glu Leu Gly Ala Asp Ser Val Asp Arg Val Glu Ile Leu Thr Ser  
 35 40 45

10 Ile Leu Asp Ser Leu Arg Leu Gln Lys Thr Pro Leu Ala Lys Phe Ala  
 50 55 60

Asp Ile Arg Asn Ile Asp Ala Leu Val Ala Phe Leu Ala Gly Glu Val  
 65 70 75 80

15 Ala Gly Gly

20 <210> 11  
 <211> 374  
 <212> Amino acid  
 <213> *Myxococcus xanthus*

25 <400> 11  
 Met Met Gln Glu Arg Gly Val Ala Leu Pro Phe Glu Asp Pro Val Thr  
 1 5 10 15

Asn Ala Val Asn Ala Ala Arg Pro Ile Leu Asp Ala Met Ser Pro Glu  
 30 20 25 30

Ala Arg Glu Arg Ile Glu Leu Leu Val Thr Ser Ser Glu Ser Gly Val  
 35 40 45

35 Asp Phe Ser Lys Ser Ile Ser Ser Tyr Ala His Glu His Leu Gly Leu  
 50 55 60

Ser Arg His Cys Arg Phe Leu Glu Val Lys Gln Ala Cys Tyr Ala Ala  
 65 70 75 80

40 Thr Gly Ala Leu Gln Leu Ala Leu Gly Tyr Ile Ala Ser Gly Val Ser  
 85 90 95

45 Pro Gly Ala Lys Ala Leu Val Ile Ala Thr Asp Val Thr Leu Val Asp  
 100 105 110

Glu Ser Gly Leu Tyr Ser Glu Pro Ala Met Gly Thr Gly Gly Val Ala  
 115 120 125

50 Val Leu Leu Gly Asp Glu Pro Arg Val Met Lys Met Asp Leu Gly Ala  
 130 135 140

Phe Gly Asn Tyr Ser Tyr Asp Val Phe Asp Thr Ala Arg Pro Ser Pro  
 145 150 155 160

55 Glu Ile Asp Ile Gly Asp Val Asp Arg Ser Leu Phe Thr Tyr Leu Asp  
 165 170 175

Cys Leu Lys His Ser Phe Ala Ala Tyr Gly Arg Arg Val Asp Gly Val  
 60 180 185 190

El  
cont

Asp Phe Val Ser Thr Phe Asp Tyr Leu Ala Met His Thr Pro Phe Ala  
195 200 205

5 Gly Leu Val Lys Ala Gly His Arg Lys Met Met Arg Glu Leu Thr Pro  
210 215 220

Cys Asp Val Asp Glu Ile Glu Ala Asp Phe Gly Arg Arg Val Lys Pro  
225 230 235 240

10 Ser Leu Gln Tyr Pro Ser Leu Val Gly Asn Leu Cys Ser Gly Ser Val  
245 250 255

Tyr Leu Ser Leu Cys Ser Ile Ile Asp Thr Ile Lys Pro Glu Arg Ser  
15 260 265 270

Ala Arg Val Gly Met Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe  
275 280 285

Phe Ser Gly Val Ile Gly Pro Glu Ser Val Ser Ala Leu Ala Gly Leu  
20 290 295 300

Asp Ile Gly Gly His Leu Arg Gly Arg Arg Gln Leu Thr Phe Asp Gln  
305 310 315 320

25 Tyr Val Glu Leu Leu Lys Glu Asn Leu Arg Cys Leu Val Pro Thr Lys  
325 330 335

Asn Arg Asp Val Asp Val Glu Arg Tyr Leu Pro Leu Val Thr Arg Thr  
30 340 345 350

Ala Ser Arg Pro Arg Met Leu Ala Leu Arg Arg Val Val Asp Tyr His  
355 360 365

35 Arg Gln Tyr Glu Trp Val  
370

40 *E1*  
40 <210> 12  
<211> 171  
<212> Amino acid  
<213> *Myxococcus xanthus*

45 <400> 12  
45 Met Asn Thr Pro Ser Leu Thr Asn Trp Pro Ala Arg Leu Gly Tyr Leu  
1 5 10 15

Leu Ala Val Gly Gly Ala Trp Phe Ala Ala Asp Gln Val Thr Lys Gln  
50 20 25 30

50 Met Ala Arg Asp Gly Ala Lys Arg Pro Val Ala Val Phe Asp Ser Trp  
35 40 45

55 Trp His Phe His Tyr Val Glu Asn Arg Ala Gly Ala Phe Gly Leu Phe  
50 55 60

55 Ser Ser Phe Gly Glu Glu Trp Arg Met Pro Phe Phe Tyr Val Val Gly  
65 70 75 80

60 Ala Ile Cys Ile Val Leu Leu Ile Gly Tyr Tyr Phe Tyr Thr Pro Pro  
85 90 95

Thr Met Lys Leu Gln Arg Trp Ser Leu Ala Thr Met Ile Gly Gly Ala  
100 105 110

5 Leu Gly Asn Tyr Val Asp Arg Val Arg Leu Arg Tyr Val Val Asp Phe  
115 120 125

Val Ser Trp His Val Gly Asp Arg Phe Tyr Trp Pro Ser Phe Asn Ile  
130 135 140

10 Ala Asp Thr Ala Val Val Val Gly Ala Ala Leu Met Ile Leu Glu Ser  
145 150 155 160

Phe Arg Glu Pro Arg Gln Gln Leu Ser Pro Gly  
165 170

15 <210> 13  
<211> 475  
<212> Amino acid  
20 <213> *Myxococcus xanthus*

<400> 13  
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25 Pro Pro Val Ala Pro Val Gly Ala Gln Ala Leu Pro Arg Gly Pro Ala  
20 25 30

30 Met Pro Gly Ile Ala Gln Leu Met Met Leu Phe Leu Arg Pro Thr Glu  
35 40 45

Phe Leu Asp Arg Cys Ala Ala Arg Tyr Gly Asp Thr Phe Thr Leu Lys  
50 55 60

35 Ile Pro Gly Thr Pro Pro Phe Ile Gln Thr Ser Asp Pro Ala Leu Ile  
65 70 75 80

40 Glu Val Ile Phe Lys Gly Asp Pro Asp Leu Phe Leu Gly Gly Lys Ala  
85 90 95

E1  
40 Asn Asn Gly Leu Lys Pro Val Val Gly Glu Asn Ser Leu Leu Val Leu  
100 105 110

45 Asp Gly Lys Arg His Arg Arg Asp Arg Lys Leu Ile Met Pro Thr Phe  
115 120 125

Leu Gly Glu Arg Met His Ala Tyr Gly Ser Val Ile Arg Asp Ile Val  
130 135 140

50 Asn Ala Ala Leu Asp Arg Trp Pro Val Gly Lys Pro Phe Ala Val His  
145 150 155 160

Glu Glu Thr Gln Gln Ile Met Leu Glu Val Ile Leu Arg Val Ile Phe  
165 170 175

55 Gly Leu Glu Asp Ala Arg Thr Ile Ala Gln Phe Arg His His Val His  
180 185 190

60 Gln Val Leu Lys Leu Ala Leu Phe Leu Phe Pro Asn Gly Glu Gly Lys  
195 200 205

Pro Ala Ala Glu Gly Phe Ala Arg Ala Val Gly Lys Ala Phe Pro Ser  
210 215 220

5 Leu Asp Val Phe Ala Ser Leu Lys Ala Ile Asp Asp Ile Ile Tyr Gln  
225 230 235 240

Glu Ile Gln Asp Arg Arg Ser Gln Asp Ile Ser Gly Arg Gln Asp Val  
245 250 255

10 Leu Ser Leu Met Met Gln Ser His Tyr Asp Asp Gly Ser Val Met Thr  
260 265 270

Pro Gln Glu Leu Arg Asp Glu Leu Met Thr Leu Leu Met Ala Gly His  
275 280 285

15 Glu Thr Ser Ala Thr Ile Ala Ala Trp Cys Val Tyr His Leu Cys Arg  
290 295 300

His Pro Asp Ala Met Gly Lys Leu Arg Glu Glu Ile Ala Ala His Thr  
20 305 310 315 320

Val Asp Gly Val Leu Pro Leu Ala Lys Ile Asn Glu Leu Lys Phe Leu  
325 330 335

25 Asp Ala Val Val Lys Glu Thr Met Arg Ile Thr Pro Val Phe Ser Leu  
340 345 350

Val Ala Arg Val Leu Lys Glu Pro Gln Thr Ile Gly Gly Thr Thr Tyr  
355 360 365

30 Pro Ala Asn Val Val Leu Ser Pro Asn Ile Tyr Gly Thr His His Arg  
370 375 380

Ala Asp Leu Trp Gly Asp Pro Lys Val Phe Arg Pro Glu Arg Phe Leu  
35 385 390 395 400

Glu Glu Arg Val Asn Pro Phe His Tyr Phe Pro Phe Gly Gly Ile  
405 410 415

40 Arg Lys Cys Ile Gly Thr Ser Phe Ala Tyr Tyr Glu Met Lys Ile Phe  
420 425 430

E1  
CMT  
45 Val Ser Glu Thr Val Arg Arg Met Arg Phe Asp Thr Arg Pro Gly Tyr  
435 440 445

His Ala Lys Val Val Arg Arg Ser Asn Thr Leu Ala Pro Ser Gln Gly  
450 455 460

50 Val Pro Ile Ile Val Glu Ser Arg Leu Pro Ser  
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<211> 318  
55 <212> Amino acid  
<213> *Myxococcus xanthus*

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Ser Gly Gln Gly Thr Gln Ser Tyr Phe Met Ala Lys Glu Leu Phe Asp  
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5 Thr Gln Thr Gly Phe Lys Arg Gln Leu Leu Glu Leu Asp Glu Gln Phe  
35 40 45

Lys Gln Arg Leu Gly His Ser Ile Leu Glu Arg Ile Tyr Asp Ala Arg  
50 55 60

10 Ala Ala Arg Leu Asp Pro Leu Asp Asp Val Leu Val Ser Phe Pro Ala  
65 70 75 80

Ile Phe Met Ile Glu His Ala Leu Ala Arg Leu Leu Ile Asp Arg Gly  
85 90 95

15 Ile Gln Pro Asp Ala Val Val Gly Ala Ser Met Gly Glu Val Ala Ala  
100 105 110

Ala Ala Ile Ala Gly Ala Ile Ser Val Asp Ala Ala Val Ala Leu Val  
20 115 120 125

Ala Ala Gln Ala Gln Leu Phe Ala Arg Thr Ala Pro Arg Gly Gly Met  
130 135 140

25 Leu Ala Val Leu His Glu Leu Glu Ala Cys Arg Gly Phe Thr Ser Val  
145 150 155 160

Ala Arg Asp Gly Glu Val Ala Ala Ile Asn Tyr Pro Ser Asn Phe Val  
165 170 175

30 Leu Ala Ala Asp Glu Ala Gly Leu Gly Arg Ile Gln Gln Glu Leu Ser  
180 185 190

Gln Arg Ser Val Ala Phe His Arg Leu Pro Val Arg Tyr Pro Phe His  
35 195 200 205

Ser Ser His Leu Asp Pro Leu Arg Glu Glu Tyr Arg Ser Arg Val Arg  
210 215 220

40 Ala Asp Ser Leu Thr Trp Pro Arg Ile Pro Met Tyr Ser Cys Thr Thr  
225 230 235 240

45 Ala Asn Arg Val His Asp Leu Arg Ser Asp His Phe Trp Asn Val Val  
245 250 255

Arg Ala Pro Ile Gln Leu Tyr Asp Thr Val Leu Gln Leu Glu Gly Gln  
260 265 270

50 Gly Gly Cys Asp Phe Ile Asp Val Gly Pro Ala Ala Ser Phe Ala Thr  
275 280 285

Ile Ile Lys Arg Ile Leu Ala Arg Asp Ser Thr Ser Arg Leu Phe Pro  
290 295 300

55 Leu Leu Ser Pro Ser Pro Ala Ser Thr Gly Ser Ser Met Gly  
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<211> 330

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<212> Amino acid

<213> *Myxococcus xanthus*

<400> 15

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20 25 30

15 Val Asn Ala Arg Lys Ala Ala Leu Phe Pro Gly Gln Gly Ser Gln Glu  
35 40 45

15 Arg Gly Met Gly Ala Ala Leu Phe Asp Glu Phe Pro Asp Leu Thr Asp  
50 55 60

20 Ile Ala Asp Ala Ile Leu Gly Tyr Ser Ile Lys Arg Leu Cys Leu Glu  
65 70 75 80

25 Asp Pro Gly Lys Glu Leu Ala Gln Thr Gln Phe Thr Gln Pro Ala Leu  
85 90 95

25 Tyr Val Val Asn Ala Leu Ser Tyr Leu Lys Arg Leu Arg Glu Gly Ala  
100 105 110

30 Glu Gln Pro Ala Phe Val Ala Gly His Ser Leu Gly Glu Tyr Asn Ala  
115 120 125

30 Leu Leu Val Ala Gly Ala Phe Asp Phe Glu Thr Gly Leu Arg Leu Val  
130 135 140

30 Lys Arg Arg Gly Glu Leu Met Ser Gly Ala Ser Gly Gly Thr Met Ala  
145 150 155 160

35 Ala Val Val Gly Cys Asp Ala Val Ala Val Glu Gln Val Leu Arg Asp  
165 170 175

40 Arg Gln Leu Thr Ser Leu Asp Ile Ala Asn Ile Asn Ser Pro Asp Gln  
180 185 190

40 Ile Val Val Ser Gly Pro Ala Gln Asp Ile Glu Arg Ala Arg Gln Cys  
195 200 205

45 Phe Val Asp Arg Gly Ala Arg Tyr Val Pro Leu Asn Val Arg Ala Pro  
210 215 220

45 Phe His Ser Arg Tyr Met Gln Pro Ala Ala Ser Glu Phe Glu Arg Phe  
225 230 235 240

50 Leu Ser Gln Phe Gln Tyr Ala Pro Leu Arg Cys Val Val Ile Ser Asn  
245 250 255

55 Val Thr Gly Arg Pro Tyr Ala His Asp Asn Val Val Gln Gly Leu Ala  
260 265 270

55 Leu Gln Leu Arg Ser Pro Val Gln Trp Thr Ala Thr Val Arg Tyr Leu  
275 280 285

60 Leu Glu Gln Gly Val Glu Asp Phe Glu Glu Leu Gly Pro Gly Arg Val  
290 295 300

E1  
CONT

Leu Thr Arg Leu Ile Thr Ala Asn Lys Arg Gly Ala Pro Ala Pro Ala  
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5 Thr Ala Ala Pro Ala Lys Trp Ala Asn Ala  
325 330

10 <210> 16  
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<213> *Myxococcus xanthus*

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20 Thr Ser Ala Ile Gly Gln Gly Ala Ala Ser Phe Thr Ser Ala Leu Leu  
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25 20 Glu Gly Ala Ala Arg Phe Arg Val Met Glu Arg Pro Gly Arg Gln His  
35 40 45

25 Gln Ala Asn Gly Gln Thr Thr Ala His Leu Gly Ala Glu Ile Ala Ser  
50 55 60

30 Leu Ala Val Pro Glu Gly Val Thr Pro Gln Leu Trp Arg Ser Ala Thr  
65 70 75 80

30 Phe Ser Gly Gln Ala Ala Leu Val Thr Val His Glu Ala Trp Asn Ala  
85 90 95

35 Ala Arg Leu Gln Ala Val Pro Gly His Arg Ile Gly Leu Val Val Gly  
100 105 110

40 35 Gly Thr Asn Val Gln Gln Arg Asp Leu Val Leu Met Gln Asp Ala Tyr  
115 120 125

40 Arg Glu Arg Val Pro Phe Leu Arg Ala Ala Tyr Gly Ser Thr Phe Met  
130 135 140

45 40 Asp Thr Asp Leu Val Gly Leu Cys Thr Gln Gln Phe Ala Ile His Gly  
145 150 155 160

45 Met Ser Phe Thr Val Gly Gly Ala Ser Ala Ser Gly Leu Leu Ala Val  
165 170 175

50 Ile Gln Ala Ala Glu Ala Val Leu Ser Arg Lys Val Asp Val Cys Ile  
180 185 190

55 50 Ala Val Gly Ala Leu Met Asp Val Ser Tyr Trp Glu Cys Gln Gly Leu  
195 200 205

55 Arg Ala Met Gly Ala Met Gly Thr Asp Arg Phe Ala Arg Glu Pro Glu  
210 215 220

60 55 Arg Ala Cys Arg Pro Phe Asp Arg Glu Ser Asp Gly Phe Ile Phe Gly  
225 230 235 240

60 Glu Ala Cys Gly Ala Val Val Glu Ser Ala Glu His Ala Arg Arg  
245 250 255

*E  
1  
OMJ*

Arg Gly Val Thr Pro Arg Gly Ile Leu Ser Gly Trp Ala Met Gln Leu  
260 265 270

5 Asp Ala Ser Arg Gly Pro Leu Ser Ser Ile Glu Arg Glu Ser Gln Val  
275 280 285

Ile Gly Ala Ala Leu Arg His Ala Asp Leu Ala Pro Glu Arg Val Asp  
290 295 300

10 Tyr Val Asn Pro His Gly Ser Gly Ser Arg Gln Gly Asp Ala Ile Glu  
305 310 315 320

Leu Gly Ala Leu Lys Ala Cys Gly Leu Thr His Ala Arg Val Asn Thr  
325 330 335

15 Thr Lys Ser Ile Thr Gly His Gly Leu Ser Ser Ala Gly Ala Val Gly  
340 345 350

Leu Ile Ala Thr Leu Val Gln Leu Glu Gln Gly Arg Leu His Pro Ser  
20 355 360 365

Leu Asn Leu Val Asp Pro Ile Asp Ser Ser Phe Arg Trp Val Gly Ala  
370 375 380

25 Thr Ala Glu Ala Gln Ser Leu Gln Asn Ala Leu Val Leu Ala Tyr Gly  
385 390 395 400

Phe Gly Gly Ile Asn Thr Ala Val Ala Val Arg Arg Ser Ala Thr Glu  
405 410 415

30 Ser

35 <210> 17  
<211> 262  
<212> Amino acid  
<213> *Myxococcus xanthus*

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E  
45 CNT Arg Phe Glu Ala Gln Thr Cys Phe Leu Gln Leu His Arg Pro Asp Ala  
20 25 30

Asp Asn Thr Ile Ser Arg Thr Leu Ile Asp Glu Cys Gln Gln Val Leu  
35 40 45

50 Thr Leu Cys Glu Glu His Ala Thr Thr Val Val Leu Glu Gly Leu Pro  
50 55 60

His Val Phe Cys Met Gly Ala Asp Phe Arg Ala Ile His Asp Arg Val  
65 70 75 80

55 Asp Asp Gly Arg Arg Glu Gln Gly Asn Ala Glu Gln Leu Tyr Arg Leu  
85 90 95

60 Trp Leu Gln Leu Ala Thr Gly Pro Tyr Val Thr Val Ala His Val Gln  
100 105 110

Gly Lys Ala Asn Ala Gly Gly Leu Gly Phe Val Ser Ala Cys Asp Ile  
115 120 125

5 Val Leu Ala Lys Ala Glu Val Gln Phe Ser Leu Ser Glu Leu Leu Phe  
130 135 140

Gly Leu Phe Pro Ala Cys Val Met Pro Phe Leu Ala Arg Arg Ile Gly  
145 150 155 160

10 Ile Gln Arg Ala His Tyr Leu Thr Leu Met Thr Arg Pro Ile Asp Ala  
165 170 175

Ala Gln Ala Leu Ser Trp Gly Leu Ala Asp Ala Val Asp Ala Asp Ser  
180 185 190

15 Glu Lys Leu Leu Arg Leu His Leu Arg Arg Leu Arg Cys Leu Ser Lys  
195 200 205

20 Pro Ala Val Thr Gln Tyr Lys Tyr Ala Ser Glu Leu Gly Gly Gln  
210 215 220

Leu Leu Ala Ala Met Pro Arg Ala Ile Ser Ala Asn Glu Ala Met Phe  
225 230 235 240

25 Ser Asp Arg Ala Thr Leu Glu Ala Ile His Arg Tyr Val Glu Thr Gly  
245 250 255

Arg Leu Pro Trp Glu Ser  
260

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<210> 18  
<211> 256  
<212> Amino acid  
35 <213> *Myxococcus xanthus*

40

45

*El*  
*Cont.*

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His Glu Val Glu Glu Gly Val Ala Gln Ile Thr Leu Val Asp Arg Glu  
20 25 30

Asn Lys Asn Met Phe Ser Glu Gln Leu Val Arg Glu Leu Ile Thr Val  
35 40 45

Phe Gly Lys Val Asn Gly Asn Glu Arg Tyr Arg Ala Val Val Leu Thr  
50 55 60

50 Gly Tyr Asp Thr Tyr Phe Ala Leu Gly Gly Thr Lys Ala Gly Leu Leu  
65 70 75 80

Ser Ile Cys Asp Gly Ile Gly Ser Phe Asn Val Thr Asn Phe Tyr Ser  
85 90 95

55

Leu Ala Leu Glu Cys Asp Ile Pro Val Ile Ser Ala Met Gln Gly His  
100 105 110

60 Gly Val Gly Gly Phe Ala Met Gly Leu Phe Ala Asp Phe Val Val  
115 120 125

Leu Ser Arg Glu Ser Val Tyr Thr Thr Asn Phe Met Arg Tyr Gly Phe  
 130 135 140

5 Thr Pro Gly Met Gly Ala Thr Tyr Ile Val Pro Lys Arg Leu Gly Tyr  
 145 150 155 160

Ser Leu Gly His Glu Leu Leu Leu Asn Ala Arg Asn Tyr Arg Gly Ala  
 165 170 175

10 Asp Leu Glu Lys Arg Gly Val Pro Phe Pro Val Leu Pro Arg Lys Glu  
 180 185 190

Val Leu Pro His Ala Tyr Glu Ile Ala Arg Asp Leu Ala Ala Lys Pro  
 195 200 205

15 Arg Leu Ser Leu Val Thr Leu Lys Arg His Leu Val Arg Asp Ile Arg  
 210 215 220

Arg Glu Leu Pro Asp Val Ile Glu Arg Glu Leu Glu Met His Gly Ile  
 20 225 230 235 240

Thr Phe His His Asp Asp Val Arg Arg Arg Ile Glu Gln Leu Phe Leu  
 245 250 255

25

30 <210> 19  
 <211> 424  
 <212> Amino acid  
 <213> *Myxococcus xanthus*

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 1 5 10 15

Val Val Leu Ala Cys Asn Asp Ala Gly Leu Phe Glu Leu Leu Arg Gln  
 20 25 30

40 Gly Pro Lys Asp Phe Asp Arg Leu Ala Glu Ala Leu Arg Ala Asn Arg  
 35 40 45

45 E!  
 cont Gly His Leu Arg Val Ala Met Arg Met Phe Glu Ser Leu Gly Trp Val  
 50 55 60

Arg Arg Asp Ala Asp Asp Val Tyr Ala Val Thr Ala Ala Ala Ala  
 65 70 75 80

50 His Arg Ser Phe Pro Arg Glu Ala Gln Ser Leu Phe Ala Leu Pro Met  
 85 90 95

Asp Arg Tyr Leu Arg Gly Glu Asp Gly Leu Ser Leu Ala Pro Trp Phe  
 100 105 110

55 Glu Arg Ser Arg Ala Ser Trp Asp Thr Asp Asp Thr Leu Val Arg Glu  
 115 120 125

60 Leu Leu Asp Gly Ala Ile Ile Thr Pro Leu Met Leu Ala Leu Glu Gln  
 130 135 140

Arg Gly Gly Leu Lys Glu Ala Arg Arg Leu Ser Asp Leu Trp Ser Gly  
145 150 155 160

5 Gly Asp Gly Arg Asp Thr Cys Val Pro Glu Ala Val Gln His Glu Leu  
165 170 175

Ala Gly Phe Phe Ser Ala Gln Lys Trp Thr Arg Glu Asp Ala Val Asp  
180 185 190

10 Ala Glu Leu Thr Pro Lys Gly Ala Phe Ile Phe Glu Arg Ala Leu Leu  
195 200 205

Phe Ala Ile Val Gly Ser Tyr Arg Pro Met Leu Ala Ser Met Pro Gln  
210 215 220

15 Leu Leu Phe Gly Asp Cys Asp Gln Val Phe Gly Arg Asp Glu Ala Gly  
225 230 235 240

His Glu Leu His Leu Asp Arg Thr Leu Asn Val Ile Gly Ser Gly His  
20 245 250 255

Gln His Arg Lys Tyr Phe Ala Glu Leu Glu Lys Leu Ile Ile Thr Val  
260 265 270

25 Phe Asp Ala Glu Asn Leu Ser Ala Gln Pro Arg Tyr Ile Ala Asp Met  
275 280 285

Gly Cys Gly Asp Gly Thr Leu Leu Lys Arg Val Tyr Glu Thr Val Leu  
290 295 300

30 Arg His Thr Arg Arg Gly Arg Ala Leu Asp Arg Phe Pro Leu Thr Leu  
305 310 315 320

Ile Ala Ala Asp Phe Asn Glu Lys Ala Leu Glu Ala Ala Gly Arg Thr  
35 325 330 335

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Cont  
Leu Ala Gly Leu Glu His Val Ala Leu Arg Ala Asp Val Ala Arg Pro  
340 345 350

40 Asp Arg Leu Ile Glu Asp Leu Arg Ala Arg Gly Leu Ala Glu Pro Glu  
355 360 365

Asn Thr Leu His Ile Arg Ser Phe Leu Asp His Asp Arg Pro Tyr Gln  
370 375 380

45 Pro Pro Ala Asp Arg Ala Gly Leu His Ala Arg Ile Pro Phe Asp Ser  
385 390 395 400

Val Phe Val Gly Lys Ala Gly Gln Glu Val Val Pro Ala Glu Val Phe  
50 405 410 415

His Ser Leu Val Glu His Leu Glu  
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